2. (Previously amended) A method according to claim 1, wherein said exposing step comprises directing said sample through said coated capillary.

3. (Previously amended) A method according to claim 1, wherein said sol-gel extraction medium comprises a sol-gel coating.

4. (Previously amended) A method according to claim 1, wherein said sol-gel extraction medium comprises a porous sol gel monolithic bed.

5. (Previously amended) A method according to claim 1, wherein an organic component of said sol-gel is selected from the group consisting of sol-gel-active forms and/or derivatives of poly(ethylene glycol), poly(methylphenylsiloxane), poly(dimethyldiphenylsiloxane), poly(dimethylsiloxane), poly(methylcyanopropylsiloxane), octadecylsilane, octylsilane, crown ethers, cyclodextrins, calixarenes, dendrimers, poly(styrene), poly(styrene-divinylbenzene), poly(acrylate), and molecularly imprinted polymers.

6. (Previously amended) A method according to claim 1, further including the step of desorbing said analyte from said sol-gel extraction medium to provide extracted analyte.

7. (Previously amended) A method according to claim 6, wherein said desorbing step comprises thermal desorbing.

8. (Previously amended) A method according to claim 6, further including the step of applying said extracted analyte to a GC capillary column.

9. (Previously amended) A method according to claim 6, further including the step of directing said extracted analyte to a liquid phase separation system.

10. (Previously amended) A method according to claim 1, further including the step of preconditioning sol-gel extraction medium prior to said exposing step.

11. (Previously amended) A method according to claim 10, wherein said preconditioning step comprises heating and purging an inert gas over sol-gel extraction medium.

12. (Cancelled) A microextraction device, comprising:

a hollow capillary, and

at least one sol-gel extraction medium within said hollow capillary for trapping at least one target analyte, said sol-gel extraction medium chemically bound to inner walls of said hollow capillary to form a sol-gel extraction medium-loaded capillary, wherein said device provides at least parts per trillion (ppt) level detection sensitivities.

13. (Cancelled) The device of claim 12, wherein said sol-gel extraction medium comprises a porous sol gel monolithic bed, said monolithic bed having a thickness equal to an internal diameter of said hollow capillary.

14. (Cancelled) The device of claim 12, wherein an organic component of said sol-gel is selected from the group consisting of sol-gel-active forms and/or derivatives of poly(ethylene glycol), poly(methylphenylsiloxane), poly(dimethyldiphenylsiloxane), poly(dimethylsiloxane), poly(methylcyanopropylsiloxane), octadecylsilane, octylsilane, crown ethers, cyclodextrins, calixarenes, dendrimers, poly(styrene), poly(styrene-divinylbenzene), poly(acrylate), and molecularly imprinted polymers.

15. (Cancelled) The device of claim 12, wherein said hollow capillary provides an internal diameter of at least 250 μm.

16. (Cancelled) A method of forming a microextraction device, comprising the steps of:

providing a hollow capillary and at least one sol-gel extraction medium;

introducing said sol-gel extraction medium within said hollow capillary, wherein said sol-gel extraction medium chemically bonds *in situ* to inner walls of said hollow capillary to form a sol-gel extraction medium-loaded capillary, said device providing at least parts per trillion (ppt) level detection sensitivities.

17. (Cancelled) A method of claim 16, wherein said sol-gel extraction medium comprises a porous sol gel monolithic bed.

18. (Cancelled) A method of claim 17, wherein said monolithic bed has a thickness equal to an internal diameter of said hollow capillary.

19. (Cancelled) The method of claim 16, wherein said hollow capillary provides an internal diameter of at least 250 μm.